Fall 2018

CHE 495 - Chemical Engineering Lab I

Robert Barat

MEMORANDUM

To: ChE 495-005 Class *From:* Prof. Robert Barat
Date: September 4, 2018 *Re:* Course Introduction (v. 1)

Pre-requisite Courses:

ChE 370 (Heat & Mass Transfer), Eng 352 (Technical Writing),
Math 225A (Survey of Probability & Statistics for ChEs)

Class Meetings:

Tuesdays, Thursdays 1 – 3:20 PM ---- Room B-7 Tiernan Hall

Attendance is Mandatory! If you need to miss class, let me know in advance if you can. Make sure your group knows in advance of your absence, if you can. Always meet in basement lab first for announcements and any short lectures before proceeding to experiments. Attendance will not be taken, but professional behavior is expected!

Instructor Information:

Office Hours: TBA; I'm on campus every day except most Fridays.
Office Location: 380 Tiernan Hall Just make an app't or stop by.
Office Phone: (973) 596-5605 Fax: (973) 596-8436
Email (preferred contact mode): robert.b.barat@njit.edu

Teaching Assistant: TBA

Course Requirements and Grading:

Four experiments will be assigned to each group. All reports and presentations are to be group efforts and submissions. Submitted reports should be hardcopy. Electronic submissions are allowed only with permission of the instructor.

- Scholarly paper (Experiment #1) 25 %
- Oral presentation (PPT to peers, Exp. #2) 25 %
- Enhanced memo (Experiment #3) 25 %
- Oral presentation (PPT to management, Exp. #4) 25 %

NOTE: Draft written reports (Enhanced Memo, Scholarly Paper) are due first class after the experiment cycle is done. These will be returned with comments and a draft grade. Final drafts are due 1 week later. There are no draft grades for the PPTs.

Moodle Site:

This course will use the NJIT Moodle site accessed by http://moodle.njit.edu.
I will use the Moodle site for:

- ☞ Class emails (check daily)
- ☞ Posting of lab manuals
- ☞ Course schedule (subject to revision)

- ☞ Important files to be reviewed

Sample Calculations Reviews:

The last class of each experimental cycle is a "review" period in which each group will present to the instructor sample data and calculations from the experiment just completed. See the Master Schedule.

Groups:

Determined 1st class; 3 students per group (groups of 2 as needed).
Rotating group leader - Self-policing (PROFESSIONAL CONDUCT EXPECTED!)

Math Solver:

You will definitely need access to a math software package to solve equations (ordinary differential and algebraic) and do regressions. Polymath is available on all ChE PC's, and is easy to use. License information will be posted so you can load Polymath on your laptops if you wish. You can use whatever software you like!

Lab Manual:

Laboratory Manual for ChE 495 – Fall 2018 --- available on the course Moodle site.

- Introduction
- Experiments

Safety Lecture:

A **mandatory** laboratory safety lecture by Mr. Yetman will be provided immediately after the course introduction. **Attendance will be taken.**

Information Literacy:

A **mandatory** lecture on Information Literacy will be provided by a member of the NJIT Library staff during one class period. **Attendance will be taken**. See the course master schedule. This lecture will help you with the Enhanced Memo.

ABET Course Goals:

1. Challenge students to apply all prior classroom knowledge and laboratory experiences in the successful execution and analysis of chemical engineering experiments with procedures and devices applicable to fluid flow and heat transfer applications.

2. Inspire students to think critically as they approach the chemical engineering laboratory experiments with an ethical awareness and a research orientation.

ABET Program Objectives Addressed:

1. **Engineering Practice:** Alumni from our program are successfully engaged in the practice of chemical engineering within industry, academe and government**,** working in a wide array of technical specialties including**,** but not limited to**,** process and plant design operations.